

ABSTRACT

Methods for making hydrogen storage tanks may include disposing a substantially solid block of hydrogen-absorbing alloy within an activation vessel. Hydrogen gas may then be introduced into the activation vessel under conditions that will cause the hydrogen-absorbing alloy to absorb hydrogen and crack or break apart. Preferably, a substantially powdered hydrogen-absorbing alloy is formed thereby. Thereafter, the substantially powdered hydrogen-absorbing alloy can be transferred from the activation vessel to a hydrogen storage tank without substantially exposing the powdered hydrogen-absorbing alloy to oxygen. The hydrogen-absorbing alloy is preferably ingot-shaped when introduced into the activation vessel. Further, the substantially powdered hydrogen-absorbing alloy is preferably produced by continuously breaking the ingot-shaped hydrogen-absorbing alloy within the activation vessel due to volume expansion caused by the hydrogen-absorbing alloy having absorbed hydrogen. The hydrogen gas preferably contacts the hydrogen-absorbing alloy under relatively high-pressure and low temperature conditions.